UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,378	09/17/2003	Steven A. Rogers	006389.00002	2690

22907   7590   11/06/2008
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ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
11/06/2008	PAPER

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PTOL-90A (Rev. 04/07)

Continuation Sheet (PTO-303)

Response to Arguments

1.   In the Remarks, with respect to independent claim 1, on pages 7 and 12,

Applicant argues no proper reasoning was provided to combine Ishioka with Klassen.

Applicant's argument in general and specifically in the last paragraph of page 7 of the

Remarks relies on Ishioka's failure to mention the word "priority".

> ❖ Examiner respectfully disagrees. It is clear that both Ishioka and Klassen
>
> teach use of test packets to determine various aspects of the network
>
> utilization. Klassen broadens the network resource utilization to include
>
> network traffic prioritization in order to provide a better capability for
>
> conducting testing in a network that prioritizes traffic as stated in Klassen
>
> Column 2, Lines 55-60. It should be noted that Applicant has not provided
>
> any reason why the combination of Ishioka and Klassen will not be
>
> functional. Further both Klassen and Ishioka teachings are related to
>
> network testing. Finally it is not at all hindsight to conclude that in any
>
> network that prioritizes all data traffic and gives preferences to high priority
>
> traffic that any test packet transmitted in such a network has to have some
>
> level of priority and in order to have little or no impact on the network
>
> traffic it makes a lot of sense to assign the lowest priority to the test
>
> packets.

2.   In the Remarks, in Section A, starting from pages 8-11, Applicant argues with

respect to all independent claims that Ishioka fails to teach transmitting test packets

during different time slots.

Applicant argues on page 8 that the phrase "time slot" has a well known meaning

in the art and provides the definition presented by Newton's Telecom Dictionary.

Further Applicant argues the different aspects of TDM systems on page 9 and

emphasizes that time slots in TDM are recurrent and have different level of granularity.

Applicant proceeds to argue the time slots claimed in all the independent claims are

time slots used in Time Division Multiplexing (TDM) or switching entities and are

effectively TDM/switching time slots.   Applicant proceeds to question the Examiner's

definition of time slot on page 10.

Applicant in the Remarks, on page 10 further argues what was cited in the last

Office Action never teaches sending test packets over a plurality of time slots.

Applicant also contests that Ishioka's teaching of a network operator evaluating different

traffic conditions at different time intervals and choosing a time intervals to transmit data

does not teach the step of transmitting data packets during time slots that were

evaluated as being favorable for the test packets.

Applicant further argues on page 11 that in TDM system time slots are pre-

assigned time slots and this is not the case with Ishioka's teachings.

Finally Applicant argues in particular with independent claim 37 that a more

precise definition is used for time slot and Applicant claims Ishioka fails to disclose such

a teaching.

Examiner respectfully disagrees with all the arguments and conclusions reached
by Applicant regarding time slots with respect to the independent claims.

❖ First, Applicant indicates that all of the time slots claimed in all the
independent claims are TDM or switching based time slots. A close
review of what is claimed in the independent claims clearly shows TDM or
switching based time slots are **not claimed**. Hence none of the
independent claims with the exception of claim 37 even refer to TDM.
None of the independent claims indicate that the endpoints can be
switches or are based on TDM principles. None of the independent claims
indicate that the entities determining time slots are governed by TDM or
switching principles. Hence Examiner has given time slot its broadest
interpretation and yet consistent with its use in the Applicant's
specification. Time slot as used in Applicant's published specification in
paragraphs 25 and 29 is simply an arbitrary delivery time period that can
be decomposed into time durations and each of the time duration is a time
slot. In the same manner, Ishioka shows a time period of 24 hours
decomposed into 8 time slots in where each time slot has duration of three
hours. Certainly the granularity of the time slots is **not claimed** and a
reading of the specification provides no evidence to indicate that these
limitations must be imported into the claims to give meaning to disputed
terms.

❖ Second, Applicant's position that the citations from Ishioka in the last Office Action fails to teach sending test packets over a plurality of time slots is incorrect. There is no question at all that Ishioka sends test packets at different time intervals. Applicant <u>readily agrees</u> in the Remarks, on page 10, Lines 5-8 by indicating that the cited passage indeed says a test was conducted eight times at intervals of three hours. The three hour interval is a time slot because a 24 hour time period was decomposed into 8 recurring time slots wherein each time slot has duration of three hours. Certainly Ishioka identifies the time interval as a time slot in Column 8, Line 34. It should also be noted that the 24 hour time period is a recurring period or time reference.

❖ Third, Applicant argument of the network operator understanding traffic conditions is not equivalent to the step of transmitting data packets during time slots that were evaluated as being favorable for the test packets is again incorrect. The result shown in Ishioka's Figure 6 clearly shows that the network operator can select which route in a given 3 hour time slot provide the least delay which in turn translates to a favorable time slot for transmitting packets. Again the selection of a time slot giving the best traffic condition from the perspective of the end point is done by sending test packets as shown in Ishioka's Figures 2 and 3. Certainly who selects the favorable time slots from the end points' perspectives is **not claimed at all**.

❖ Fourth, Applicant argument on page 11, Lines 3-5 that Ishioka's system is
not a TDM system where time slots are assigned is at best irrelevant
because a TDM system is not at all claimed in any of the independent
claims with the exception of claim 37 (Claim 37 is addressed below).
Further in the Applicant's own published specification in particular in the
last section of paragraph 25 it states "unlike TDM system, no endpoint can
be guaranteed to have a particular time slot or time slots". In other words
even in the Applicant's system, unlike TDM system, time slots are not
assigned. This statement definitely implies that the endpoints are not
governed by time division multiplexing and the unclaimed TDM based time
slot definition Applicant is advocating cannot be considered applicable to
these independent claims in general. Independent claims 1 and 15, cite
Ethernet networks and there is no time slot assignment in such a network.
Independent claim 19 cites a network and does not qualify the type of
network and is certainly broad enough to be mapped to the teachings of
Ishioka.

❖ Fifth, regarding independent claim 37, even though it claims a specific
type of network with switches, it still deals with an arbitrary time period or
an arbitrary time reference frame decomposed into time durations called
time slots which is consistent with the definition described in Applicant's
published specification in paragraphs 25 and 29. These time slots as
claimed have relative meaning to two endpoints that participated in the

test. Again <u>there is no requirement in the limitation that require the</u>

<u>endpoints to be governed by TDM and/or switching principles</u>. An IP

network with intermediary switches is claimed but so does Ishioka in

Figure 7 teaches an IP network with intermediary switches that should be

governed by the same time slot concepts the Applicant is suggesting in

the Remarks. From the Examiner's perspective Ishioka again provides a

24 hour time reference between two of its endpoints in its network where

the time reference is divided into 8 time slots wherein each time slot has

three hours duration. During these time slots test packets are transmitted

to determine which time slot is favorable and consequently data is

transmitted in the selected time slot.   The limitations in claim 37 imply any

one endpoint can establish arbitrarily a time reference frame and this

frame is not communicated to all endpoints and hence Ishioka's 24 hour

time period can be mapped to a time reference frame. The time reference

frame **is not claimed and taught** to be <u>broadcast</u> to all network elements

and hence <u>there can be different time reference periods with different</u>

<u>granularities between different endpoints</u>. Clearly Applicant's published

specification in the first sentence addresses <u>such a time reference frame</u>

<u>as an arbitrary delivery time period</u>.

3.   In the Remarks, in Section B, on page 11, Applicant seems to be arguing that

selection of a path does not constitute a selection of any particular time slots.

❖ Examiner respectfully disagrees. As shown in Figure 6, for each route at

different time slots test packets are sent. Ishioka's system is not obligated

to select a specific route in its entirety. Instead one is free to pick the best

time slots that provide the least delay (i.e. favorable traffic condition) and

end up picking different sections of different routes to accomplish such a

goal. The support for this analysis is given in Column 7, Lines 55-67 and

Column 8, Lines 1-10.

4.   In the Remarks, in Section C, on page 12 Applicant contests that Klassen does

not transmit test packets at a lower level than data packets.

❖ Examiner respectfully disagrees. The Applicant has made identical

arguments previously and Examiner has responded accordingly with

proper citations from Klassen. Examiner is maintaining the same position

and advises Applicant to review in detail item 3 in the Advisory Action

mailed out on 3/13/2008.

5.   In the Remarks, in section D, Applicant argues with respect to independent claim

19 that Klassen does not transmit test packets at a data rate that emulates data

packets.

❖ Examiner respectfully disagrees. Applicant has correctly explained how

Klassen teaches the limitation in the Remarks on page 13 in Lines 3-10 by

clearly admitting that Klassen tests different categories of traffic with

different packet size. Klassen conducts these tests by sending test

packets and these test packets are sent at different rates to emulate the

different data traffic being tested and hence there is no question that

Klassen addresses the limitation in question, namely, "transmitting test

packets at a data rate that emulates data packet". Also it should be noted

that in addition to the different traffic types having different data rates

changing packet size can also change data rate.

6.   In the Remarks, in Section E, Applicant argues Ishioka does not schedule

packets for transmission within time slots within a frame that is synchronized to a clock.

   ❖ Examiner respectfully disagrees. This entire dependent claim is requiring

      that the transactions in Ishioka endpoint be synchronized to a clock. By

      definition the transmitter has its own clock. The transaction can be

      scheduling transmission of packets in the different time slots shown in

      Figure 6. More over here the claim does not require the two end points be

      synchronized to the same clock. Again time slots within a frame are

      adequately addressed in this advisory in item 2. Certainly Ishioka

      decomposing a 24 hour time frame into 8 time slots.

7.   In the Remarks, in Section G, Applicant argues that Klassen fails to teach three-

level of priority scheme with respect to dependent claims 10 and 28.

   ❖ Examiner respectfully disagrees. The Applicant has made identical

      arguments previously and Examiner has responded accordingly with

      proper citations from Klassen. Examiner is maintaining the same position

      and advises Applicant to review in detail item 3 in the Advisory Action

      mailed out on 3/13/2008.

8.   In the Remarks, in Section II, Applicant argues with respect to independent claim

15, Applicant continues to contest the definition of time slot. Applicant further argues

Ishioka does not empirically determine which of the plurality of time slots is associated

with a reduced level of packet contention and actually teaches selecting network path

that is associated with a lower latency. Applicant further argues Ishioka only selects a

path not a time for transmitting the packets. With respect to dependent claim 22,

Applicant argues "zero delay" does not imply "zero contention" and gives basis for such

a support by indicating there may be contention in Ishioka's system not affecting the test

packet.

   ❖ Examiner respectfully disagrees. Regarding Examiner's position on time

      slots is already clearly stated in item 2 in the instant Advisory Action.

   ❖ Regarding Applicant's argument that Ishioka does not empirically

      determine which of the plurality of time slots is associated with a reduced

      level of packet contention and actually teaches selecting network path that

      is associated with a lower latency and Ishioka only selects a path not a

      time for transmitting the packets is adequately addressed in item 3 of the

      instant Advisory Action.

   ❖ Applicant's position with respect to claim 22 that zero delay does not result

      in zero contention because some other entity or end point in Ishioka

      system may be experiencing some level of contention is absolutely

      irrelevant point to what is claimed. What is claimed is with respect to the

      data packets emanating from the specific end point eventually experience

zero contention point and the fact of the matter is that these data packets

in Ishioka's system experiencing zero delay implies zero contention from

the perspective of the source end point. The source end point sending the

data packets through the network is able to identify the time slots and

routes corresponding to the zero delay and these time sots are zero

contention time slots from the perspective of the source end point.

However irrelevant it may sound, in Ishioka's as well as the Applicant's

system different end points can experience some level of contention in

some part of the system totally unrelated to the source end point in

question sending the data packets experiencing zero delay.

9.   In the Remarks, in Section III, on page 16, Applicant argues with respect to

independent claim 17 that Klassen fails to teach different priority levels for test packets

compared to the data packets.

❖ Examiner respectfully disagrees. The Applicant has made identical

arguments previously and Examiner has responded accordingly with

proper citations from Klassen. Examiner is maintaining the same position

and advises Applicant to review in detail item 3 in the Advisory Action

mailed out on 3/13/2008.

10.   In the Remarks, in Section III, on page 16, Applicant argues with respect to

independent claim 18 that Klassen fails to teach sending test packets at a data rate

sufficient to support a desired bandwidth because Applicant believes Klassen sends

packets at the same rate and has no means to adjust data rate to support the desired

bandwidth. Applicant indicates the fact that inter-packet interval is constant implies data rate is constant in Klassen's system.

> ❖ Examiner respectfully disagrees. Klassen can send test packets at different rates to support the desired bandwidth. It appears Applicant has not fully appreciated Klassen's teachings in these respects. First the inter-packet interval is a parameter that can be changed from one set of test to another set of tests and the cited portions clearly support that. Assuming Applicant is correct only for discussion purposes still Klassen can change the size of the test packets while maintaining a fixed test packet interval. Basic communication teachings dictates that if the size of the test packet varies while having a fixed test packet interval then the data rate of the system has to change.

11.   In the Remarks in Section IV, with respect to independent claims 31 and 37 Applicant argues no proper reasoning was provided to combine Ishioka with Klassen.

> ❖ Examiner respectfully disagrees. The issue has been addressed by the Examiner in item 1 of the instant Advisory Action.

12.   In the Remarks in Section IV, with respect to independent claims 31 and 37 Applicant repeats the same arguments regarding time slot definition which were previously stated in the current Remarks in Section A. Applicant also repeats the same arguments with respect to independent claims 31 and 37 in terms of priority levels which were previously stated in the current Remarks in Sections C and G.

❖ Examiner respectfully disagrees and indicates that in item 2 of the instant
Application Examiner has addressed all issues and arguments related to
time slot definition as well as establishing time reference frame.

❖ Examiner respectfully disagrees and has indicated that the Applicant has
made identical arguments previously regarding priority levels and
Examiner has responded accordingly with proper citations from Klassen.
Examiner is maintaining the same position and advises Applicant to
review in detail item 3 in the Advisory Action mailed out on 3/13/2008.

13.   In the Remarks, on page 18, in the last two paragraphs with respect to
independent claim 37, Applicant's main argument boils down to there is no selection of
time at all let alone time slot in Ishioka's teachings and further argues Klassen's
teachings fail to teach changing data rates of test packets and further points out
Klassen does not mention anything related to data rate.

❖ Examiner respectfully disagrees with Applicant's position stating there is
no selection of time at all in Ishioka's teachings. Clearly Ishioka teaches
selecting the time duration or slot corresponding to the least contentious
routes in Column 8, Lines 55-67, Column 8, Lines 1-10 and 32-34.

❖ Examiner respectfully disagrees with Applicant's position that Klassen
does not teach changing data rates of test packets. Examiner maintains
the position stated in the last Office Action that indeed test packets are
sent at different data rates as indicated in Column 7, Lines 4-8 and
Column 5, Lines 5-8. Klassen shows in these citing that test packets are

sent to emulate different traffic types at different data rates – surely video

has a different rate than audio service. Klassen can change the size of

the test packets while maintaining a fixed test packet interval. Basic

communication teachings dictates that if the size of the test packet varies

while having a fixed test packet interval then the data rate of the system

has to change. In fact Applicant's own published specification in

paragraph 30 shows the relationship between packet size and data rate.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to HABTE MERED whose telephone number is (571)272-

6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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